Management & prevention of type 2 diabetes

DIABETES CARE

Intensive education improves diabetes self-management

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓✓

1 A total of 216 people who had had type 2 diabetes for more than 1 year were assigned either to an extended or a compressed education regimen over a year. As other studies have looked at educating those with newly diagnosed diabetes, the aim of this study was to compare the two intervention programmes' effectiveness in Mexican-Americans who had suffered from the condition for some time.

2 Except for the primary language spoken, there were no clinically significant differences between the extended and compressed groups.

3 The extended group had a total of 24 hours' education and 28 hours of support in groups; the compressed group had 16 hours and 6 hours of education and group support, respectively.

4 HbA_{1c}, fasting blood glucose and knowledge levels were assessed at 3 and 12 months. Although no significant differences were seen between the groups, all three measures decreased from baseline to assessment at 3 and 12 months.

5 Within the groups, an obvious difference was observed between those participants who attended the education and support sessions for <50 % of the time and those who attended for ≥50 % of the time.

6 In conclusion, intensive education and support appears to improve self-management of diabetes in Mexican-Americans as long as the intervention is tailored to the individuals.

Brown SA, Blozis SA, Kouzekanani K, Garcia AA, Winchell M, Hanis CL (2005) Dosage effects of diabetes self-management education for Mexican Americans. *Diabetes Care* **28**(3): 527–32

Diabetes learning for life

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We pay lip service to the need for structured group education for people with type 2 diabetes. We are increasingly good on the evidence base for which drug and when, the power of polypharmacy and the role of earlier introduction of insulin to deliver the goods. We understand the concepts of rapid dose escalation for insulin, the fact that the correct use of insulin requires individual dose titration and that the right dose of insulin is the dose which delivers normal or near normal blood sugar results for the individual patient. We are comfortable with the tight dose–response relationship between, say, statins and LDL-cholesterol reduction and understand that to deliver adequate cardiovascular protection we need optimal angiotensin-converting enzyme inhibition (1.25 mg of ramipril is not enough!)

However, we export little of our knowledge of pharmacology – absorption, distribution, metabolism and excretion – to patient education. How much time is there for education in the routine outpatient setting once we've done the introductions, data collection, disease monitoring and therapeutic adjustment? How much of what we discuss at any one session is actually absorbed, retained beyond the door of the consulting room and learned? How widely is the message distributed and applied? How often is it chewed over, digested, debated, reconsidered (metabolised) and how quickly is it cleared from the hard drive or dumped as irrelevant (excreted)? Okay you can push any analogy too far but you get my drift.

DESMOND, FIRST FOCUS and all the myriad variations on the theme provide, for the most part, good, structured, quality-assured group education for patients with newly diagnosed diabetes (and incidentally, provided the learning outcomes are similar and the package and process are evaluated, I don't believe we need to force a single 'one size fits all' educational product or package on everyone. I believe we should allow local communities and services to provide the education that best fits the needs of their patients, their communities and their healthcare professionals – significantly in that order). But what about the patients who have had diabetes for 1, 5 or 10 years? This article (Brown et al, 2005; summarised on left) shows that there is a dose–response relationship for diabetes education – attending more sessions resulted in greater improvement in metabolic control. Two other articles in the issue support the principle that better education and intensification of lifestyle delivers improved results: *Reversal of nonalcoholic hepatic steatosis, hepatic insulin resistance, and hyperglycemia by moderate weight reduction in patients with type 2 diabetes* (Petersen et al, 2005; see page 166); and *An intensified lifestyle intervention programme may be superior to insulin treatment in poorly controlled Type 2 diabetic patients on oral hypoglycaemic agents: results of a feasibility study* (Aas et al, 2005; see page 156).

I look forward to seeing more data on how to do education best and reading reports of better studies with greater between-group differences, conducted over longer periods and presented more accessibly than in this report. But let's hear it for education and well done *Diabetes Care* for publishing this evaluation!

DIABETES CARE

Caffeine reduces glucose uptake

Readability	✓✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓

1 The effect of caffeine ingestion was examined with reference to insulin sensitivity in lean and obese men with and without diabetes.

2 The study participants underwent two hyperinsulinaemic euglycaemic clamp procedures before and after 3 months of following an aerobic exercise programme.

3 Independent of obesity, type 2 diabetes and chronic exercise, caffeine ingestion was associated with a significant decrease in insulin sensitivity.

Lee S, Hudson R, Kilpatrick K et al (2005) Caffeine ingestion is associated with reductions in glucose uptake independent of obesity and type 2 diabetes before and after exercise training. *Diabetes Care* **28**(3): 566–72

Type 2 diabetes

DIABETES CARE

Diabetes risk score predicts type 2 diabetes and IGT

Readability	✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓

1 The diabetes risk score (DRS) was used to identify people at risk of developing type 2 diabetes and impaired glucose tolerance (IGT). The main aim was to evaluate the effectiveness of the DRS.

2 The results indicate that for people with one or more cardiovascular risk factor, DRS scores can successfully identify individuals who may suffer from IGT or type 2 diabetes, with specificities of 57 % and 83 %, respectively.

3 The authors therefore conclude that DRS scoring offers an inexpensive opportunistic method of screening for IGT and type 2 diabetes in people presenting with one or more cardiovascular risk factors.

Franciosi M, Berardis GD, Rossi MCE et al (2005) Use of the diabetes risk score for opportunistic screening of undiagnosed diabetes and impaired glucose tolerance. *Diabetes Care* **28**(5): 1187–94

DIABETES CARE

Pioglitazone controls blood glucose more effectively than gliclazide

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓

1 In this randomised study, participants were treated with either pioglitazone or gliclazide for a period of 2 years in order to assess HbA_{1c} control.

2 A greater proportion of participants were found to maintain their HbA_{1c} levels at <8 % with pioglitazone. The difference was observed at week 32, with significant differences being observed at week 52.

3 Pioglitazone is, therefore, concluded to be better at maintaining HbA_{1c} at lower and more acceptable target levels for longer, when compared with gliclazide.

Tan MH, Baksi A, Krahulec B et al (2005) Comparison of pioglitazone and gliclazide in sustaining glycemic control over 2 years in patients with type 2 diabetes. *Diabetes Care* **28**(3): 544–50

DIABETIC MEDICINE

Lifestyle intervention as effective as insulin treatment for HbA_{1c} levels

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓✓

1 Thirty-eight people with type 2 diabetes with poor glycaemic control were randomised to three treatments in this feasibility study: lifestyle intervention only (L); lifestyle intervention and insulin treatment (L+I); and insulin treatment alone (I). The purpose of this study was to determine, firstly, whether lifestyle intervention based on diet and exercise was as effective as insulin treatment in blood glucose control and, secondly, whether diet and exercise intervention could prevent the weight gain characteristic of insulin treatment. All treatments were carried out for 12 months prior to data analysis against baseline.

2 At 12 months, HbA_{1c} values were non-significantly reduced in all three groups (1.2 %, 1.0 % and 1.5 % for the L, L+I and I groups, respectively). Weight change between groups was not significant either.

3 No significant difference was observed between the intervention groups in HbA_{1c} levels between start and at 12 months (P=0.74).

4 Observed weight changes between groups were clinically significant (P<0.01): group L reduced weight by an average of 3.0 kg; groups L+I and I increased their weight by an average of 3.5 kg and 4.9 kg, respectively.

5 Therefore, lifestyle intervention was as effective as insulin treatment in improving glycaemic control and resulted in weight loss. The study suggests there is potential for lifestyle intervention to improve control even in patients with long-duration diabetes.

Aas AM, Bergstad I, Thorsby PM, Johannesen Ø, Solberg M, Birkeland KI (2005) An intensified lifestyle intervention programme may be superior to insulin treatment in poorly controlled Type 2 diabetic patients on oral hypoglycaemic agents: results of a feasibility study. *Diabetic Medicine* **22**(3): 316–22

Type 2 diabetes

ANNALS OF EPIDEMIOLOGY

Metabolic syndrome incidence correlates with cancer rates

Readability	✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓✓

1 The investigators aimed to estimate the prevalence of metabolic syndrome in people with a history of cancer. Data from the Third National Health and Nutrition Examination Survey (NHANES) were examined to compare prevalence of metabolic syndrome.

2 The results showed a significant positive association between the prevalence of metabolic syndrome and a history of cancer, particularly breast, colon, prostate and lung cancers.

3 This study's results corroborate other emerging evidence that type 2 diabetes, metabolic syndrome and cardiovascular disease risk factors may be associated with increased risk of malignancy and even adverse late side effects of cancer and its treatment

Ness KK, Oakes M, Punyko JA et al (2005) Prevalence of the metabolic syndrome in relation to self-reported cancer history. *Annals of Epidemiology* **15**(3): 202–6

DIABETIC MEDICINE

Mobile screening aids in meeting new targets

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓✓

1 This short communication provides details of an annual mobile screening programme for cardiovascular and microvascular complications of type 2 diabetes in primary care. It also details monetary savings/potential earnings from successful screening of such complications as retinopathy, intermittent claudication, neuropathy, cardiovascular disease and hypertension.

2 The authors relate how this annual review provides the potential to meet new National Service Framework/GMS contract targets The programme provides a one-stop screen for cardiovascular disease, hypertension, retinopathy and neuropathy in the patients' local practice and gives written footcare, dietary and smoking cessation advice to all patients.

Sampson MJ, Barriet P, Dozio N et al (2005) A mobile screening programme for the cardiovascular and microvascular complications of Type 2 diabetes in primary care. *Diabetic Medicine* **22**(3): 256–7

DIABETES CARE

Atorvastatin significantly reduces risk of major cardiovascular events

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓

1 Over 10 000 hypertensive people with no history of coronary heart disease but at least three cardiovascular risk factors were randomly assigned to receive 10 mg atorvastatin or placebo. Effects on total cardiovascular outcomes in 2532 of the participants who had type 2 diabetes were compared after a median follow-up period of 3.3 years.

2 During the follow-up, total and LDL-cholesterol were found to be, on average, 1 mmol/l lower in those in the atorvastatin group compared with the placebo group. Changes in HDL-cholesterol were minimal in both groups.

3 Compared with placebo, atorvastatin significantly lowered the incidence of cardiovascular events and procedures among the participants with diabetes by 23 % (P=0.036). This was similar to the proportional reduction observed among participants without diabetes.

4 For the individual components of the study end point, the number of cardiovascular events occurring in the study population with diabetes was small. Therefore, although fewer coronary events and strokes were observed among the atorvastatin group, the reductions were not statistically significant.

5 The study concludes that atorvastatin significantly reduces the risk of major cardiovascular events among people with diabetes with well-controlled hypertension and with no previous history of coronary heart disease.

Sever PS, Poulter NR, Dahlof B, Wedel H, Collins R, Beevers G et al (2005) Reduction in cardiovascular events with atorvastatin in 2,532 patients with type 2 diabetes. *Diabetes Care* **28**(5): 1151–7